

What is claimed is:

1        1.        A method of manufacturing a hermetically-sealed optoelectronic package having  
2        an optoelectronic device mounted on a first portion of a top surface of an insulating base,  
3        a metal layer mounted to a second portion of the top surface of the insulating base, the  
4        second portion surrounding the first portion, and a metal cap coupled to the metal layer,  
5        the method comprising:

6                supplying a force to push the metal cap against the metal layer;  
7                applying a first electrode to the metal cap;  
8                applying a second electrode to the metal layer; and  
9                supplying a current between the first and second electrodes to weld the metal cap  
10        to the metal layer.

1        2.        The method of claim 1, wherein the second electrode has multiple fingers  
2        to make contact with the metal layer at multiple points.

1        3.        The method of claim 2, wherein the multiple fingers of the second  
2        electrode are independently positioned on the metal layer.

1        4.        The method of claim 2, further comprising:  
2        independently adjusting one or more currents provided to the multiple fingers of  
3        the second electrode.

1        5.        The method of claim 1, wherein the metal cap is coupled to an upper  
2        surface of the metal layer and the second electrode is also coupled to the upper surface of  
3        the metal layer.

1           6.       The method of claim 1, wherein the metal cap is coupled to an upper  
2 surface of the metal layer and the second electrode is coupled to a side surface of the  
3 metal layer, the side surface being substantially 90 degrees from the upper surface.

1           7.       The method of claim 1, wherein the metal cap is coupled to an upper  
2 surface of the metal layer and the second electrode is coupled to a bottom surface of the  
3 metal layer, the bottom surface being substantially 180 degrees from the top surface.

4           8.       The method of claim 1, wherein the second electrode is cone-shaped.

1           9.       A method for manufacturing an electronic package, comprising:  
2           applying a first electrode to a cap;  
3           applying at least one or more second electrodes to a ceramic substrate, wherein  
4 the at least one or more second electrodes are applied to at least one or more sidewalls of  
5 the ceramic substrate and wherein the ceramic substrate includes a seal disposed on a  
6 surface of the ceramic substrate to contact the cap;  
7           contacting the cap with the seal of the ceramic substrate; and  
8           applying a current between said first electrode and said at least one or more  
9 second electrodes to weld the cap to the ceramic substrate.

1           10. A method as claimed in claim 9, wherein the ceramic substrate is a  
2 rectangular structure having at least four sidewalls.

1           11. A method as claimed in claim 9, wherein the ceramic substrate has a least one  
2           sidewall.

1           12. A method as claimed in claim 9, wherein the substrate has at least one curved  
2           sidewall.

1           13. A method as claimed in claim 9, wherein the ceramic substrate includes a  
2           radio-frequency circuit disposed thereon.

1           14. A method as claimed in claim 9, further comprising controlling the current in  
2           individual ones of the at least one or more second electrodes to provide a hermetic seal  
3           between the cap and the ceramic substrate.

1           15. A method as claimed in claim 9, wherein the at least one or more second  
2           electrodes include an insulator to contact a base support during said applying a current.

1           16. A method as claimed in claim 9, wherein the ceramic substrate does not  
2           include filled vias to pass welding current.

1           17. A method as claimed in claim 9, wherein the ceramic substrate is a  
2           rectangular structure having four sidewalls, the at least one or more second electrodes  
3           including four second electrodes to be applied to respective sidewalls of the ceramic  
4           substrate.

1           18. A method for manufacturing an electronic package, comprising:  
2           applying a first electrode to a cap;  
3           applying at least one or more second electrodes to an insulator substrate, wherein  
4           the at least one or more second electrodes are applied to at least one or more sidewalls of  
5           the insulator substrate and wherein the insulator substrate includes a seal disposed on a  
6           surface of the insulator substrate to contact the cap;  
7           contacting the cap with the seal of insulator substrate; and  
8           applying a current between said first electrode and said at least one or more  
9           second electrodes to weld the cap to the insulator substrate.

1           19. A method as claimed in claim 18, wherein the insulator substrate has a  
2           conductivity of less than 1 (ohm-centimeters)<sup>-1</sup>.

1           20. A method as claimed in claim 18, wherein the insulator substrate is a  
2           rectangular structure having four sidewalls, the at least one or more second electrodes  
3           including four second electrodes to be applied to respective sidewalls of the insulator  
4           substrate.